REMARKS

The Office action dated November 29, 2005, has been carefully reviewed, and the foregoing amendment has been prepared in response to that Office action.

Claims 13-15 and 37 stand rejected under 35 U.S.C. 102(b) as anticipated by Babin et al (U.S. Patent 5,825,176). Claim 13, which is drawn to an apparatus, has been amended to more particularly distinguish the apparatus over that disclosed in the '176 patent. Specifically, Claim 13, as amended, recites that the second component continuously covers a path between the sensor and the target component, and the second component no source of magnetic flux. The device shown in Figures 2 and 15 of the '176 patent include a component 34, 308 that is formed with openings or apertures 302, 66, which repetitively uncover a path between the target and sensor. Also, the device shown in Figure 15 includes a target formed on its outer periphery with a series of permanent magnets, whose positive polarity alternate between radially inward and radially outward. Amended Claim 13 defines an apparatus according to the present invention that is characteristically different from the sensing apparatus disclosed in the '176 patent. Claims 14 and 15 add limitations to those of Claim 13; therefore, Claims 14 and 15 are also patentably distinguished over the cited prior art.

Claim 37 has been amended to more particularly define the method over the cited prior art. Amended Claim 37 now recites that the path between a sensor and the target component is continuously covered by the second component. It states that further that a step of the method determines the rotational speed of the target component based on values of the signal produced by changing a characteristic of the magnetic flux from the sensor and without reference to another signal. The device of '176 patent produces a first high frequency-low amplitude signal and a second high amplitude-low frequency signal. It is therefore necessary when using the device of the '176 patent to electronically manipulate the signals using electronic signal conditioning circuitry to separate the individual components of the electrical output signal in order to determine the rotational speed of the target (See Col. 5 lines 3-17). The method defined by Claim 17 requires no secondary conditioning of this type. The

claimed method determines rotational speed of the target with reference to the signal generated in response to changes in a characteristic of the magnetic flux path.

Claims 1-3, 6-12, and 16 stand rejected under 35 U.S.C. 103(a) as unpatentable over Babin et al. (the '176 patent) in view of applicant's admission and further in view of Uchida (the '099 patent). Claim 1 has been amended to more specifically define the apparatus over the cited prior art. As amended, Claim 1 states that a sensor faces the target, and the second component is interposed between the sensor and the target such that the target is continually hidden from view of the sensor by the second component. The device disclosed in the '176 patent includes a second component 308 that is formed with apertures 328 that are located such that the sensor 332 faces the target 304 and can view the target through the apertures formed in the second component.

The Office action cites the '099 patent for disclosing (at Column 8, lines 1-7) a non-magnetic material having a low magnetic permeability such as carbon steel because the '176 does not disclose a second component formed of material having a relative magnetic permeability equal to or less than 25.0. In fact, the citation says that the connecting member 17 is made of nonmagnetic material having a low magnetic permeability, such as ceramic, stainless steel, aluminum or resin, but not carbon steel. The pole teeth are of carbon steel, according to the citation, not the moveable interposed connecting member 17. The Office action concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified the device of the '176 patent to provide a low carbon steel, non-magnetic second component having a low magnetic permeability as taught by the '099 patent. Low carbon steel is magnetic; it is not non-magnetic. The '099 patent neither discloses nor suggests that low carbon steel is non-magnetic or could be used to form member 17. The '099 patent states that carbon steel and silicon steel are magnetic materials. There is no teaching or suggestion either in the '099 patent or in applicant's admission that a low carbon steel, non-magnetic second component has a low magnetic permeability.

Claim 16 has been amended further to recite that the second component continuously blocks the target component from a magnetic source, and the controller determines the rotational speed of the target component using a signal and without reference to another signal. As discussed above, the '176 patent produces both a low amplitude-high frequency signal and a high amplitude-low frequency signal. Both signals are used to determine the rotational speed of the target. Also, the '176 patent discloses a device formed with apertures 328 in the second component 308 such that the target 304 is not continuously blocked from the sensor 332, which produces a magnetic source.

In view of the foregoing amendment and remarks, Claims 1-16 and 37 are patentably distinguished over the cited prior art references and appear now in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,

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